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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,414	07/08/2004	Mark R. Bilak	BUR920010045US2	4413
7590 11/30/2006				
Andrew M. Calderon GREENBLUM & BERNSTEIN, P.L.C. 1950 Roland Clarke Place Reston, VA 20191		EXAMINER CHEN, ALAN S		
		ART UNIT PAPER NUMBER		
		2182		

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/710,414	<b>Applicant(s)</b> BILAK ET AL.	
	<b>Examiner</b> Alan S. Chen	<b>Art Unit</b> 2182	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 September 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-12 is/are rejected.
- 7) ☒ Claim(s) 4-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED FINAL ACTION*****Response to Arguments***

1. Applicant's arguments regarding the double patenting rejection for claims 4-6, 8, 9, 11 and 12 are persuasive and therefore the rejection is withdrawn for those claims. However, no arguments were presented for claims 1-3, 7 and 10 besides the improper use of *In Re Schneller*, which requires the TC Director approval. The argument alone does not remove the double patenting rejection. Claims 1-3, 7 and 10 of the instant application are broad enough in scope to cover claims 1 and 3-7 of US Pat. No. 6,877,048. The original double patenting rejection is given in further detail below in the section on double patenting.

2. Applicant's arguments regarding the prior art for claims 4-6, filed 09/01/2006 have been fully considered and are persuasive. The rejection for claims 4-6 are hereby withdrawn. However the arguments made against the remaining claims are not persuasive. Examiner's rebuttal is given below.

**Issue 1**

3. Applicant's main argument, summarized in the last paragraph of page 12, is that the prior art to Yin does not disclose the inbound and outbound memory as claimed because Yin has a single shared memory used for both input and output, namely element 102 of Fig. 2. There is no separate inbound memory or outbound memory.

The Examiner does not agree with the contention that the shared memory cannot be interpreted having two distinct memories that qualifies as an inbound memory and outbound memory. In Yin, there is a clear distinction between the

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output memory (*equated to address queues, see Figs. 5-9, elements 112-116 of the instant application*) and the input memory (*what constitutes as the data cells stored in shared memory*). Column 3, line 65 through Column 4, line 5 expressly disclose, "...the address queue is associated with a particular output port of switch 100...", thus address queue, by definition, being an "output memory". Column 3, lines 40 through Column 3, lines 50 disclose the data cells coming through the input ports (*Fig. 2,  $IN_x$* ) is stored in a portion of the share memory, specifically shown in Fig. 5-7, elements 106. While the data cells and address queue may be occupied on the same monolithic piece of memory, they do not overlap and are physically stored in separate storage areas as clearly delineated in Figs. 5-7, element 106 of the shared memory; Figs. 5-7, element 102, represents the input data cells; Figs. 5-7, element 110 shows the physical area of the shared memory, element 102, where the address queue occupies. By virtue of the fact that the input memory and output memory at no point in time overlap the same physical space, they are clearly separate and distinct memory portions. Nowhere in the claims preclude the use of a monolithic memory that is partitioned into separate functional memory portions used for inbound and outbound data. Applicant's arguments do not reflect broad scope of the claims. Examiner recommends if the Applicant intends to distinguish the inbound memory and the outbound memory as structurally separate, then to do so in the claim language.

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**Issue 2**

4. Applicant argues it is impossible for Yin to have circuitry that dynamically allocates memory from the inbound memory for use by the outbound memory or vice versa based on Yin not having separate inbound and outbound memories.

Continuing from Examiner's rebuttal from Issue 1 having established distinct inbound and outbound memories in Yin, it is expressly stated in Yin's disclosure the dynamic allocation the input memory and output memory. Per Column 4, lines 53-65, the address queue size dynamically adjusts based on usage of shared memory, element 102. So for instance, if the input memory is increased the discard threshold is decreased for the address queues so that there is more available for input data cell memory. On the other hand if there is fewer input memory in use, the discard threshold increases, allowing for more address queue memory. Fig. 8A shows the functional block diagram of the circuitry that performs this dynamic memory allocation.

**Issue 3**

5. Applicant argues that address queues of Yin stores just addresses and not the actual data cell for output.

Examiner wishes to point out the claim language does not require the data packets in their entirety to be stored and transmitted in the outbound memory or even the inbound memory for that matter. Examiner asserts that as long as the inbound and output memories are used *in some* aspect of receiving and transmitting the data packets, then it suffices to meet the language of the claims.

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Yin does exactly that, where the address queue are associated with the output port for transmitting data while the data cells are used to store incoming data.

### ***Double Patenting***

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1-3, 7 and 10 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 and 3-7 of U.S. Patent No. 6,877,048. Although the conflicting claims are not identical, they are not patentably distinct from each other because of the following:

The claims of the patent contains every aspect of claims 1-3, 7 and 10 of the instant application and as such obviates claims 1-3, 7 and 10 of the instant application. [*In re Goodman*, 29 USPQ2d 2010 (CAFC 1993)]



More specifically, per claims 1,2,7 and 10 of the instant application, the inbound memory limitation of the instant application is covered by the first memory buffer limitation of the patent; the output memory limitation with second buffer memory limitation; the circuitry limitation with the corresponding circuitry limitation of the patent; the outbound and inbound memory sizes limitation covered by the first and second memory block size limitation of the patent. Claim 3 of the instant application is given in claim 6 of the patent disclosing the limitations of an inbound processor and outbound processor.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1,2 and 7-12 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat. No. 6,219,728 to Yin.

10. Per claim 1, Yin discloses an apparatus for processing packets (*Fig. 2*) comprising: an inbound memory for receiving data packets (*Figs. 5-7, elements 106 is memory dedicated for input data cells*); an outbound memory for transmitting data packets (*Fig. 2, elements 112-116, address queues  $Q_1 \dots Q_n$  are associated with the output ports, hence output memory; Column 4, lines 1-5*);

and circuitry (*Fig. 8A*) capable of dynamically allocating memory from the inbound memory for use by the outbound memory or vice versa (*Column 4, lines 53-65*).

11. Per claims 7 and 10, claim 1 is substantially similar and therefore the rejection is applied accordingly to these claims.

12. Per claim 2, Yin discloses claim 1, Yin further disclosing the outbound and inbound memories have a size that is smaller than the maximum frame size of the data packet to be processed (*Fig. 4, element 107 shows one packet, each packet having multiple ATM cells; Column 4, lines 10-20, the ATM cells are what gets stored in each element of the buffers, therefore the memory size per element is less than the entire packet frame size*).

13. Per claims 8,9 and 11,12, Yin discloses claims 7 and 11, Yin further disclosing the step of dynamically allocating includes the steps of determining that the inbound and/or outbound memory buffer requires additional memory and dynamically allocating it more memory from inactive outbound and/or inbound buffers (*address queue discard threshold is dynamically adjusted based on requirements of the input memory, Fig. 2, element 106; Column 4, lines 53-65 and Column 5, lines 55+ disclose in more detail this dynamic adjustment*).

#### ***Allowable Subject Matter***

14. Claims 4-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.



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The following is the statement of reasons for the indication of allowable subject matter: The prior art disclosed by the applicant and cited by the Examiner fail to teach or suggest, alone or in combination, ***all*** the limitations of the independent claim(s) (claims 1), particularly the specific roles of the first and second processors in receiving/transmitting/processing the data packets.

***Conclusion***

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan S. Chen whose telephone number is 571-272-4143. The examiner can normally be reached on M-F 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim N. Huynh can be reached on 571-272-4147. The fax

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phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ASC  
11/22/2006



**KIM HUYNH**  
**SUPERVISORY PATENT EXAMINER**

11/22/06